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UNITED STATES DEPARTMENT OF AGRICULTURE
Production and Marketing Administration
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VARIATIONS IN COTTON BALE WEIGHTS, AND
ASSOCIATED MARKETING PROBLEMS 1/

American cotton bales for most general purposes are estimated to have a gross weight of 500 pounds, and the average weight of bales from an entire crop exceeds this standard figure by only a very small margin. Each season, however, some bales weigh as little as 300 pounds or less and others in excess of 700 pounds. These wide variations in weight from the average are the cause of several problems and inefficiencies in the handling and marketing of cotton.

Some statistics are now available on the extent of this problem. Weight distribution data for the 1951-52 and 1952-53 seasons show that although more than two-thirds of the bales in each season were concentrated within the weights 450 to 550 pounds, about 8 and 6 percent of ginnings in the two seasons, respectively, either weighed 400 pounds and less or more than 600 pounds (tables 1 and 2). In Alabama, Georgia, Louisiana, North Carolina, Oklahoma, and South Carolina, about 8 percent or more of production in each season was in the lightweight and extra-heavy bale groupings cited above. Even in States such as Arizona, California, and New Mexico, where extremes in weight were less prevalent, about 5 percent of the bales was in the undesirable weight groups.

Lightweight bales have several distinct disadvantages in marketing. Such bales represent an uneconomical use of baling material and are extremely difficult to compress to required densities. Bales considerably below average in weight are subject to appreciably higher per pound marketing costs since charges for services, such as storage, sampling, weighing, and compression, usually are assessed on a per bale basis irrespective of weight. Also, the usual tare allowance of 4.4 percent of gin bales is calculated on the assumption of 22 pounds of bagging and ties on a 500-pound bale. Lightweight bales carrying such a tare exceed the allowance and are therefore subject to penalty for over tare. In order to offset this factor, graduated penalties are assessed in marketing channels usually starting at \$1 per bale at the 450- to 400-pound level and increasing to \$3 per bale when weights drop below 350 to 300 pounds, according to territory of growth. (Continued on page 4)

1/ This study was conducted under the direction of John W. Wright, Chief, Research and Testing Division, Cotton Branch. Collection of the original data was made possible by the cooperation of cotton ginner and field representatives of the Cotton Branch.

Table 1.--Percentage distribution of gin bale weights of upland cotton according to specified weight intervals, by States, season 1951-52 1/

State	Weight of bales (pounds)												Total
	300 or less	301 to 350	351 to 400	401 to 450	451 to 500	501 to 550	551 to 600	601 to 650	651 to 700	701 or more			
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent		
Alabama	0.2	1.8	3.6	9.1	28.0	40.6	12.8	3.0	0.7	0.2		100.00	
Arizona	2/	0.1	1.3	13.0	33.5	34.2	13.7	3.4	0.6	0.2		100.00	
Arkansas	0.1	0.3	2.7	13.0	31.7	36.2	12.0	3.2	0.6	0.2		100.00	
California	---	0.2	1.2	13.0	39.6	31.6	11.3	2.6	0.5	---		100.00	
Georgia	0.2	1.6	4.1	14.9	33.8	33.2	9.9	1.9	0.4	2/		100.00	
Louisiana	0.1	1.2	4.1	9.7	29.4	36.8	14.2	3.7	0.6	0.2		100.00	
Mississippi	0.2	1.4	4.2	12.5	32.2	35.0	11.6	2.2	0.6	0.1		100.00	
Missouri	0.1	1.5	7.6	22.7	33.6	20.6	9.7	3.1	0.6	0.5		100.00	
New Mexico	0.1	0.9	2.8	11.9	44.1	31.8	6.2	1.8	0.4	---		100.00	
North Carolina	0.5	2.8	6.3	17.0	27.7	32.1	10.5	2.4	0.4	0.3		100.00	
Oklahoma	0.3	2.0	5.0	13.2	29.1	32.4	13.9	3.1	0.8	0.2		100.00	
South Carolina	0.3	1.2	4.6	20.3	33.9	31.0	6.7	1.6	0.4	---		100.00	
Tennessee	0.1	1.1	3.4	11.1	27.1	39.3	13.5	3.5	0.6	0.3		100.00	
Texas	0.4	0.7	2.3	10.6	32.0	37.1	13.4	2.8	0.6	0.1		100.00	
United States 3/	0.2	0.9	3.1	12.4	32.5	35.2	12.3	2.7	0.6	0.1		100.00	

1/ Data based on records obtained from ginner.

2/ Less than 0.05 percent.

3/ Includes data for minor cotton-producing States.

Table 2.--Percentage distribution of gin bale weights of upland cotton according to specified weight intervals, by States, season 1952-53 1/

State	Weight of bales (pounds)										Total
	300 or less	301 to 350	351 to 400	401 to 450	451 to 500	501 to 550	551 to 600	601 to 650	651 to 700	701 or more	
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Alabama	0.2	1.2	3.7	8.4	29.4	42.4	12.1	2.2	0.3	0.1	100.00
Arizona	---	---	0.7	10.5	33.1	38.8	13.5	2.6	0.8	---	100.00
Arkansas	<u>2/</u>	0.4	1.9	8.2	29.2	43.8	13.4	2.6	0.5	<u>2/</u>	100.00
California	0.3	0.3	0.9	14.3	42.0	28.9	10.0	2.8	0.5	<u>2/</u>	100.00
Georgia	0.3	1.5	4.2	15.4	36.3	31.7	8.9	1.4	0.3	<u>2/</u>	100.00
Louisiana	0.1	1.2	2.9	9.3	31.8	36.9	13.3	3.9	0.5	0.1	100.00
Mississippi	0.1	0.6	2.0	8.5	29.4	42.1	14.2	2.5	0.5	0.1	100.00
Missouri	---	0.6	3.4	14.3	32.8	32.7	13.3	2.4	0.3	0.2	100.00
New Mexico	---	0.5	1.5	8.9	33.7	44.0	9.5	1.4	0.4	0.1	100.00
North Carolina	0.5	2.6	6.6	14.3	27.8	32.7	12.6	2.5	0.3	0.1	100.00
Oklahoma	0.2	1.3	3.2	11.4	27.5	37.0	15.1	3.4	0.8	0.1	100.00
South Carolina	---	1.6	6.7	23.5	33.8	24.5	7.4	2.2	0.3	---	100.00
Tennessee	<u>2/</u>	0.7	2.2	7.6	25.2	45.0	16.4	2.4	0.4	0.1	100.00
Texas	0.2	0.5	1.3	7.6	28.4	42.4	16.2	2.8	0.5	0.1	100.00
United States <u>3/</u>	0.1	0.7	2.1	9.6	30.5	39.9	13.9	2.6	0.5	0.1	100.00

1/ Data based on records obtained from ginner.

2/ Less than 0.05 percent.

3/ Includes data for minor cotton-producing States.

Extra-heavy bales (600 pounds or more) are a serious potential source of damage to both gin press and compress equipment. Such bales also slow down operations and endanger workmen at both locations. Extra-heavy bales are more difficult to handle, store, and transport, are more ragged in appearance, and failure of ties is not uncommon. In recent years, efforts have been made to discourage the packaging of cotton in overweight bales, and penalties have been levied in some areas amounting to as much as \$5 on bales weighing in excess of 700 pounds.



